designated in the Signaling Connection Control Part (SCCP) called party address.

12.2.10.8 Network management controls resulting from an overload in elements not supporting MCIm customers shall not affect queries to MCIm SCPs.

12.2.10.9 Requirements for billing and recording information to track AIN query-response usage shall be consistent with Connectivity Billing and Recording requirements as specified in Attachment VIII (e.g., recorded message format and content, timeliness of feed, data format and transmission medium).

12.2.10.10 ILEC shall provide to MCIm all necessary testing resources and staff to perform service certification testing prior to service deployment in accordance with the Cooperative section of this Agreement.

12.2.10.11 When MCIm selects SS7 AIN Access, ILEC will provide an interface to the ILEC STP provisioning process for provisioning of ILEC's STP global title translation data.

12.2.10.12 When MCIm selects SS7 AIN Access, ILEC will provide interconnection of its SS7 network with the ILEC SS7 network for exchange of AIN TCAP messages as described in Section 12.2.10.13.2.

12.2.10.13 STPs shall offer SS7 AIN Access in accordance with the requirements of the following technical references:

12.2.10.13.1 GR-2863-CORE, CCS Network Interface Specification Supporting Advanced Intelligent Network (AIN); and

12.2.10.13.2 GR-2902-CORE, CCS Network Interface Specification (CCSNIS) Supporting Toll-Free Service Using Advanced Intelligent Network (AIN).

12.3 Interface Requirements

12.3.1 ILEC shall provide the following STPs options to connect MCIm or MCIm-designated local switching systems or STPs to the ILEC SS7 network:

12.3.1.1 An A-link interface from MCIm local switching systems; and,

12.3.2 Each type of interface shall be provided by one or more sets (layers) of signaling links, as follows:

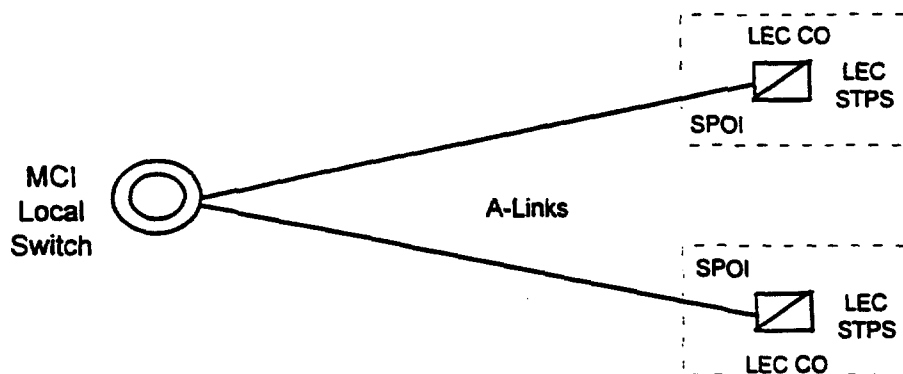12.3.2.1 An A-link layer shall consist of two links, as depicted in Figure 6.

LEC CO

LEC STPS

SPOI

MCI Local Switch

A-Links

SPOI

LEC STPS

LEC CO

Figure 6. A-Link Interface

12.3.3 The Signaling point of Interconnection (SPOI) for each link shall be located at a cross-connect element, such as a DSX-1, in the Central Office (CO) where the ILEC STPs is located. There shall be a DSI or higher rate transport interface at each of the SPOIs. Each signaling link shall appear as a DS0 channel within the DS1 or higher rate interface.
ILEC shall offer higher rate DS1 signaling for interconnecting MCIm local switching systems or STPs with ILEC STPs as soon as these become approved ANSI standards and available capabilities of ILEC STPs.

12.3.4 ILEC shall provide MTP and SCCP protocol interfaces that shall conform to all sections relevant to the MTP or SCCP in the following specifications:

12.3.4.1 Bellcore GR-905-CORE, Common Channel Signaling Network Interface Specification (CCSNIS) Supporting Network Interconnection, Message Transfer Part (MTP), and Integrated Services Digital Network User Part (ISDNUP); and

12.3.4.2 Bellcore GR-1432-CORE, CCS Network Interface Specification (CCSNIS) Supporting Signaling Connection Control Part (SGCP) and Transaction Capabilities Application Part (TCAP).

12.4 Message Screening

12.4.1 ILEC shall set message screening parameters so as to accept messages from MCIm local or tandem switching systems destined to any signaling point in the ILEC SS7 network with which the MCIm switching system has a legitimate signaling relation.

12.4.2 ILEC shall set message screening parameters so as to accept messages from MCIm local or tandem switching systems destined to any signaling point or network interconnected to the ILEC SS7 network with which the MCIm switching system has a legitimate signaling relation.

12.4.3 ILEC shall set message screening parameters so as to accept messages destined to an MCIm local or tandem switching system from any signaling point or network interconnected to the ILEC SS7 network with which the MCIm switching system has a legitimate signaling relation.

12.4.4 ILEC shall set message screening parameters so as to accept and send messages destined to an MCIm SCP from any signaling point or network interconnected to the ILEC SS7 network with which the MCIm SCP has a legitimate signaling relation.

12.5 STP Requirements

12.5.1 STPs shall be equal to or better than all of the requirements for STPs set forth in the following technical references:

12.5.2 ANSI T1.111-1992 American National Standard for Telecommunications - Signaling System Number 7 (SS7) - Message Transfer Part (MTP);

12.5.3 ANSI T1.111A-1994 American National Standard for Telecommunications - Signaling System Number 7 (SS7) - Message Transfer Part (MTP) Supplement;

12.5.4 ANSI T1.112-1992 American National, Standard for Telecommunications - Signaling System Number 7 (SS7) - Signaling Connection Control Part (SCCP);

12.5.5 ANSI T1.115-1990 American National Standard for Telecommunications –Signaling System Number 7 (SS7) - Monitoring and Measurements for Networks;

12.5.6 ANSI T1.116-1990 American National Standard for Telecommunications - Signaling System Number 7 (SS7) - Operations, Maintenance and Administration Part (OMAP);

12.5.7 ANSI T1.118-1992 American National Standard for Telecommunications - Signaling System Number 7 (SS7) - Intermediate Signaling Network Identification (ISNI);

12.5.8 Bellcore GR-905-CORE, Common Channel Signaling Network Interface Specification (CCSNIS) Supporting Network Interconnection, Message Transfer Part (MTP), and Integrated Services Digital Network User Part (ISDNUP); and

12.5.9 Bellcore GR-1432-CORE, CCS Network Interface Specification (CCSNIS) Supporting Signaling Connection Control Part (SCCP) and Transaction Capabilities Application Part (TCAP).

Section 13.   Service Control Points/Databases

13.1 Definition:

13.1.1 Databases are the Network Elements that provide the functionality for storage of, access to, and manipulation of information required to offer a particular service and/or capability. Databases include, but are not limited to: Number Portability, LIDB, Toll Free Number Database, Automatic Location Identification/Data Management System, access to Service Creation Environment and Service Management System (SCE/SMS).

13.1.2 A Service Control Point (SCP) is a specific type of Database Network Element functionality deployed in a Signaling System 7 (SS7) network that executes service application logic in response to SS7 queries sent to it by a switching system also connected to the SS7 network. SCPs also provide operational interfaces to allow for provisioning, administration and maintenance of subscriber data and service application data. (e.g., an 800 database stores customer record data that provides information necessary to route 800 calls).

13.2 Technical Requirements for SCPs/Databases

Requirements for SCPs/Databases within this section address storage of information, access to information (e.g. signaling protocols, response times), and administration of information (e.g., provisioning, administration, and maintenance). All SCPs/Databases shall be provided to MCIm in accordance with the following requirements, except where such a requirement is superseded by specific requirements set forth in Subsections 13.3 through 13.7:

13.2.1 ILEC shall provide physical interconnection to SCPs through the SS7 network and protocols, as specified in Section 12 of this Attachment, with TCAP as the application layer protocol.

13.2.2 ILEC shall provide physical interconnection to databases via industry standard interfaces and protocols (e.g., ISDN and X.25).

13.2.3 The reliability of interconnection options shall be consistent with requirements for diversity and survivability as specified in Section 12 of this Attachment (which applies to both SS7 and non-SS7 interfaces).

13.2.4 Database functionality shall be unavailable a maximum of 30 minutes per year.

13.2.5 ILEC shall provide Database provisioning consistent with the provisioning requirements of this Agreement (e.g., data required, edits, acknowledgments, data format and transmission medium and notification of order completion).

13.2.6 The operational interface provided by ILEC shall complete Database transactions (i.e., add, modify, delete) for MCIm customer records stored in ILEC databases within 24 hours, or sooner where ILEC provisions its own customer records within a shorter interval.

13.2.7 ILEC shall provide Database maintenance consistent with the maintenance requirements as specified in this Agreement (e.g., notification of ILEC Network Affecting Events, testing, dispatch schedule and measurement and exception reports).

13.2.8 ILEC shall provide billing and recording information to track database usage consistent with connectivity billing and recording

requirements as specified in this Agreement (e.g., recorded message format and content, timeliness of feed, data format and transmission medium).

13.2.9 ILEC shall provide SCPs/Databases in accordance with the physical security requirements specified in this Agreement.

13.2.10 ILEC shall provide SCPs/Databases in accordance with the logical security requirements specified in this Agreement.

13.3 Number Portability Database

13.3.1 Definition:

The Number Portability (NP) database supplies routing numbers for calls involving numbers that have been ported from one local service provider to another. NP database functionality shall also include Global Title Translations (GTT) for calls involving ported numbers even if
ILEC provides GTT functionality in another Network Element. This Subsection 13.3 supplements the requirements of Subsection 13.2 and 13.7. ILEC shall provide the Number Portability Database in accordance with the following:

13.3.2 Requirements

13.3.2.1 ILEC shall make ILEC NP database available for MCIm switches to query to obtain the appropriate routing number on calls to ported numbers or the industry specified indication that the number is not ported for non-ported numbers in NPA-NXXs that are opened to portability. The specified indication will also be provided when the NPA-NXX is not open to portability;

13.3.2.2 Query responses shall provide such additional information, for example, Service Provider identification, as may be specified in the NP implementation in the relevant regulatory jurisdiction;

13.3.2.3 ILEC shall provide GTT for CLASS or LIDB queries routed to the ILEC network by MCIm switches. ILEC database or other Network Element shall perform the GTT function and route the query to the appropriate switch or LIDB accordingly;

13.3.2.4 The NP database shall provide such other functionality as has been specified in the regulatory jurisdiction in which portability has been implemented;

13.3.2.5 Unavailability of the NP database query and GTT applications shall not exceed 4 minutes per year; and

13.3.2.6 The ILEC NP database shall respond to a query within 125 msec. of receipt of the query.

13.3.3 Interface Requirements

13.3.3.1 ILEC shall interconnect the signaling interface between the MCIm or other local switch and the NP database using the TCAP protocol as specified in the technical reference in Section 13.7.1, together with the signaling network interface as specified in the technical reference in Section 13.7.2, and such further requirements (e.g., AIN or IN protocols) as may be specified by bodies responsible for implementation of number portability in the jurisdiction at hand; (e.g., Generic Requirements for SCP Application and GTT Function for Number Portability, Issue 0.3, Final Draft, March 22, 1996 [Editor - Ameritech Inc.]).

13.4 Line Information Database (LIDB)

This Subsection 13.4 defines and sets forth additional requirements for the Line Information Database. This Subsection 13.4 supplements the requirements of Subsection 13.2 and 13.7.

13.4.1 Definition:

The Line Information Database (LIDB) is a transaction-oriented database accessible through Common Channel Signaling (CCS) networks. It contains records associated with customer Line Numbers and Special Billing Numbers (in accordance with the requirements in the technical reference in Section 13.7.5). LIDB accepts queries from other Network Elements and provides appropriate responses. The query originator need not be the owner of LIDB data. LIDB queries include functions such as screening billed numbers that provides the ability to accept Collect or Third Number Billing calls and validation of Telephone Line Number based non-proprietary calling cards. The interface for the LIDB functionality is the interface between the ILEC CCS network and other CCS networks. LIDB also interfaces to administrative

systems. The administrative system interface provides Work Centers with an interface to LIDB for functions such as provisioning, auditing of data, access to LIDB measurements and reports.

13.4.2 Technical Requirements

13.4.2.1 Prior to the availability of a long-term solution for Number Portability, ILEC shall enable MCIm to store in ILEC's LIDB any customer Line Number or Special Billing Number record, (in accordance with the technical reference in Section 13.7.5) whether ported or not, for which the NPA-NXX or NXX-0/1XX Group is supported by that LIDB.

13.4.2.2 Prior to the availability of a long-term solution for Number Portability, ILEC shall enable MCIm to store in ILEC's LIDB any customer Line Number or Special Billing Number (in accordance with the technical reference in Section 13.7.5) record, whether ported or not, and NPA-NXX and NXX-0/1XX Group Records, belonging to an NPA-NXX or NXX-0/1 XX owned by MCIm.

13.4.2.3 Subsequent to the availability of a long-term solution for Number Portability, ILEC shall enable MCIm to store in ILEC's LIDB any customer Line Number or Special Billing Number (in accordance with the technical reference in Section 13.7.5) record, whether ported or not, regardless of the number's NPA-NXX or NXX-0/1XX.

13.4.2.4 ILEC shall perform the following LIDB functions (i.e., processing of the following query types as defined in the technical reference in Section 13.7.5) for MCIm's customer records in LIDB:

13.4.2.4.1 Billed Number Screening (provides information such as whether the Billed Number may accept Collect or Third Number Billing calls); and

13.4.2.4.2 Calling Card Validation.

13.4.2.5 ILEC shall process MCIm's customer records in LIDB at least at parity with ILEC customer records, with respect to other LIDB functions (as defined in the technical reference in Section 13.5). ILEC shall indicate to MCIm

what additional functions (if any) are performed by LIDB in their network.

13.4.2.6 Within two (2) weeks after a request by MCIm, ILEC shall provide MCIm with a list of the customer data items which MCIm would have to provide in order to support each required LIDB function. The list shall indicate which data items are essential to LIDB function, and which are required only to support certain services. For each data item, the list shall show the data formats, the acceptable values of the data item and the meaning of those values.

13.4.2.7 ILEC shall provide LIDB systems for which operating deficiencies that would result in calls being blocked, shall not exceed 30 minutes per year.

13.4.2.8 ILEC shall provide LIDB systems for which operating deficiencies that would not result in calls being blocked shall not exceed 12 hours per year.

13.4.2.9 ILEC shall provide LIDB systems for which the LIDB function shall be in overload (degraded performance in accordance with the technical reference in Section 13.7.5) no more than 12 hours per year. Such deficiency period is in addition to the periods specified in Sections 13.4.2.7 and 13.4.2.8 above.

13.4.2.10 ILEC shall provide MCIm with the capability to provision (e.g., to add, update, and delete) NPA-NXX and NXX-0/1XX Group Records, and Line Number and Special Billing Number Records, associated with MCIm customers, directly into ILEC's LIDB provisioning process.

13.4.2.11 In the event that end user customers change their local service provider, ILEC shall maintain customer data (for line numbers, card numbers, and for any other types of data maintained in LIDB) so that such customers shall not experience any interruption of service due to the lack of such maintenance of customer data.

13.4.2.12 All additions, updates and deletions of MCIm data to the LIDB shall be solely at the direction of MCIm.

13.4.2.13 ILEC shall provide priority updates to LIDB for MClm data upon MClm's request (e.g., to support fraud protection).

13.4.2.14 ILEC shall provide MClm the capability to directly obtain, through an electronic interface, reports of all MClm data in LIDB.

13.4.2.15 ILEC shall provide LIDB systems such that no more than 0.01% of MClm customer records will be missing from LIDB, as measured by MClm audits.

13.4.2.16 ILEC shall perform backup and recovery of all of MClm's data in LIDB as frequently as MClm may reasonably specify, including sending to LIDB all changes made since the date of the most recent backup copy.

13.4.2.17 ILEC shall provide to MClm access to LIDB measurements and reports at least at parity with the capability ILEC has for its own customer records and that ILEC provides to any other party. Such access shall be electronic.

13.4.2.18 ILEC shall provide MClm with LIDB reports of data which are missing or contain errors, as well as any misroute errors, within the time period reasonably designated by MClm.

13.4.2.19 ILEC shall prevent any access to or use of MClm data in LIDB by ILEC personnel or by any other party that is not authorized by MClm in writing.

13.4.2.20 ILEC shall provide MClm performance of the LIDB Data Screening function, which allows a LIDB to completely or partially deny specific query originators access to LIDB data owned by specific data owners, (in accordance with the technical reference in Section 13.7.5) for Customer Data that is part of an NPA-NXX or NXX-0/1XX wholly or partially owned by MClm at least at parity with ILEC Customer Data. ILEC shall obtain from MClm the screening information associated with LIDB Data Screening of MClm data in accordance with this requirement.

13.4.2.21 ILEC shall accept queries to LIDB associated with MCIm customer records, and shall return responses in accordance with the requirements of this Section 13.

13.4.2.22 ILEC shall provide mean processing time at the LIDB within 0.50 seconds under normal conditions as defined in the technical reference in Section 13.7.5.

13.4.2.23 ILEC shall provide processing time at the LIDB within 1 second for 99% of all messages under normal conditions as defined in the technical reference in Section 13.7.5.

13.4.2.24 ILEC shall provide 99.9 % of all LIDB queries in a round trip response within 2 seconds.

13.4.2.25 ILEC shall provide LIDB performance that complies with the following standards:

13.4.2.25.1 There shall be at least a 99.9% reply rate to all query attempts.

13.4.2.25.2 Queries shall time out at LIDB no more than 0.1% of the time.

13.4.2.25.3 Data in LIDB replies shall have at no more than 2% unexpected data values, for all queries to LIDB.

13.4.2.25.4 No more than 0.01% of all LIDB queries shall return a missing customer record.

13.4.2.25.5 There shall be no defects in LIDB Data Screening of responses.

13.4.2.25.6 Group troubles shall occur for no more than 1% of LIDB queries. Group troubles include:

13.4.2.25.6.1 Missing Group — When reply is returned "vacant" but there is no active record for the 6-digit NPA-NXX group.

13.4.2.25.6.2 Vacant Code — When a 6-digit code is active but is not assigned to any customer on that code.

13.4.2.25.6.3 Non-Participating Group and unavailable Network Resource — should be identified in the LARG (LIDB Access Routing Guide) so MCIm does not pay access for queries that will be denied in LIDB.

13.4.3 Interface Requirements

ILEC shall offer LIDB in accordance with the requirements of this subsection 13.4.3.

13.4.3.1 The interface to LIDB shall be in accordance with the technical reference in Section 13.7.3.

13.4.3.2 The CCS interface to LIDB shall be the standard interface described in Section 13.7.3.

13.4.3.3 The LIDB Data Base interpretation of the ANSI-TCAP messages shall comply with the technical reference in Section 13.7.4. Global Title Translation shall be maintained in the signaling network in order to support signaling network routing to the LIDB.

13.5 Toll Free Number Database

The Toll Free Number Database is a SCP that provides functionality necessary for toll free (e.g., 800 and 888) number services by providing routing information and additional so-called vertical features during call set-up in response to queries from SSPs. This Subsection 13.5 supplements the requirements of Subsection 13.2 and 13.7. ILEC shall provide the Toll Free Number Database in accordance with the following:

13.5.1 Technical Requirements

13.5.1.1 ILEC shall make the ILEC Toll Free Number Database available for MCIm to query with a toll-free number and originating information.

13.5.1.2 The Toll Free Number Database shall return carrier identification and, where applicable, the queried toll free

number, translated numbers and instructions as it would in response to a query from a ILEC switch.

13.5.1.3 The SCP shall also provide, at MCIm's option, such additional feature as described in SR-TSV-002275 (BOC Notes on the ILEC Networks, SR-TSV-002275, Issue 2, (Bellcore, April 1994)) as are available to ILEC. These may include but are not limited to:

13.5.1.3.1 Network Management;

13.5.1.3.2 Customer Sample Collection; and

13.5.1.3.3 Service Maintenance.

13.5.2 Interface Requirements

The signaling interface between the MCIm or other local switch and the Toll-Free Number database shall use the TCAP protocol as specified in the technical reference in Section 13.7.1, together with the signaling network interface as specified in the technical reference in Sections 13.7.2 and 13.7.6.

13.6 Automatic Location Identification/Data Management System (ALI/DMS)

The ALI/DMS Database contains customer information (including name, address, telephone information, and sometimes special information from the local service provider or customer) used to determine to which Public Safety Answering Point (PSAP) to route the call. The ALI/DMS database is used to provide more routing flexibility for E911 calls than Basic 911. This Subsection 13.6 supplements the requirements of Subsection 13.7.2 and 13.7.6. ILEC shall provide the Emergency Services Database in accordance with the following:

13.6.1 Technical Requirements

13.6.1.1 ILEC shall offer MCIm a data link to the ALI/DMS database or permit MCIm to provide its own data link to the ALI/DMS database.

ILEC shall provide error reports from the ALI/DMS data base to MCIm immediately after MCIm inputs information into the ALI/DMS data base. Alternately, MCIm may utilize ILEC, to

enter customer information into the data base on a demand basis, and validate customer information on a demand basis.

13.6.1.2 The ALI/DMS database shall contain the following customer information:

    13.6.1.2.1 Name;

    13.6.1.2.2 Address;

    13.6.1.2.3 Telephone number; and

    13.6.1.2.4 Other information as appropriate (e.g., whether a customer is blind or deaf or has another disability).

13.6.1.3 When ILEC is responsible for administering the ALI/DMS database in its entirety, ported number NXXs entries for the ported numbers should be maintained unless MCIm requests otherwise and shall be updated if MCIm requests.

13.6.1.4 When Remote Call Forwarding (RCF) is used to provide number portability to the local customer and a remark or other appropriate field information is available in the database, the shadow or "forwarded-to" number and an indication that the number is ported shall be added to the customer record.

13.6.1.5 If ILEC is responsible for configuring PSAP features (for cases when the PSAP or ILEC supports an ISDN interface) it shall ensure that CLASS Automatic Recall (Call Return) is not used to call back to the ported number.

13.6.2 Interface Requirements

13.6.2.1 The interface between the E911 Switch or Tandem and the ALI/DMS database for MCIm customers shall meet industry standards.

13.7 SCPs/Databases shall be equal to or better than all of the requirements for SCPs/Databases set forth in the following technical references:

13.7.1 GR-246-CORE, Bell Communications Research Specification of Signaling System Number 7, ISSUE 1 (Bellcore, December 199);

13.7.2 GR-1432-CORE, CCS Network Interface Specification (CCSNIS) Supporting Signaling Connection Control Part (SCCP) and Transaction Capabilities Application Part (TCAP). (Bellcore, March 1994);

13.7.3 GR-954-CORE, CCS Network Interface Specification (CCSNIS) Supporting Line Information Database (LIDB) Service 6, Issue 1, Rev. 1 (Bellcore, October 1995);

13.7.4 GR-1149-CORE, OSSGR Section 10: System Interfaces, Issue 1 (Bellcore, October 1995) (Replaces TR-NWT-001149;

13.7.5 GR-1158-CORE, OSSGR Section 22.3: Line Information Database 6, Issue (Bellcore, October 1995)

13.7.6 GR-1428-CORE, CCS Network Interface Specification (CCSNIS) Supporting Toll Free Service (Bellcore, May 1995); and

13.7.7 "Bellcore Special Report SR-TSV-002275, IBOC Notes on the LEC Networks - Signaling".)

13.8   Service Creation Environment and Service Management System (SCE/SMS) Advanced Intelligent Network (AIN) Access

13.8.1 SCE/SMS AIN Access shall provide MCIm the ability to create service applications in the ILEC SCE and deploy those applications via the ILEC SMS to the ILEC SCP. This interconnection arrangement shall provide MCIm access to the ILEC development environment and administrative system in a manner at least at parity with ILEC's ability to deliver its own AIN-based services. SCE/SMS AIN Access is the provisioning of AIN triggers in a ILEC local switch, development of service applications within the ILEC Service Creation Environment, and deployment of service applications via the ILEC Service Management System. See Figure 7 below.
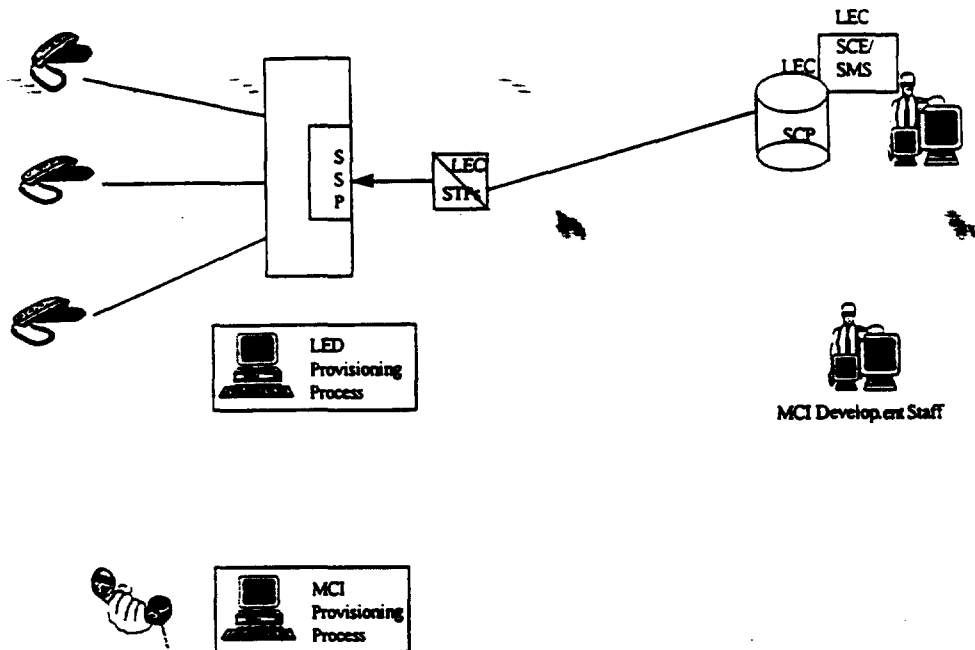
Figure 7

13.8.2 ILEC shall make SCE hardware, software, testing and technical support (e.g., help desk, system administrator) resources available to MCIm. Scheduling of SCE resources shall allow MCIm at least equal priority to ILEC.

13.8.3 The ILEC SCE/SMS shall allow for multi-user access with proper source code management and other logical security functions as specified in the Security section of this Agreement.

13.8.4 The ILEC SCP shall partition and protect MCIm service logic and data from unauthorized access, execution or other types of compromise.

13.8.5 ILEC shall provide training, documentation, and technical support of MCIm development staff in a manner at least at parity with that provided to ILEC's own development staff. Training sessions shall be "suitcased" to MCIm facilities or delivered at ILEC facilities, at MCIm's discretion.

13.8.6 When MCIm selects SCE/SMS AIN Access, ILEC shall provide for a secure, controlled access environment on-site as well as via remote data connections (e.g., dial up, LAN, WAN).

13.8.7 When MCIm selects SCE/SMS AIN Access, ILEC shall allow MCIm to download data forms and/or tables to the ILEC SCP via the ILEC SMS without intervention from ILEC (e.g. service customization and customer subscription).

13.8.8 SCPs/Databases shall offer SCE/SMS AIN Access in accordance with the requirements of: GR-1280-CORE, AIN Service Control Point (SCP) Generic Requirements.

Section 14. Tandem Switching

14.1 Definition:

Tandem Switching is the function that establishes a communications path between two switching offices through a third switching office (the tandem switch) including but not limited to CLEC, ILEC, Independent telephone companies, IXCs and wireless carriers.

14.2 Technical Requirements

14.2.1 Tandem Switching shall have the same capabilities or equivalent capabilities as those described in Bell Communications Research TR-TSY-000540 Issue 2R2, Tandem Supplement, 6/l/90. The requirements for Tandem Switching include, but are not limited to, the following:

14.2.1.1 Tandem Switching shall provide signaling to establish a tandem connection;

14.2.1.2 Tandem Switching shall provide screening and routing as designated by MCIm;

14.2.1.3 Tandem Switching shall provide recording of all billable events designated by MCIm;

14.2.1.4 Tandem Switching shall provide Advanced Intelligent Network triggers supporting AIN features;

14.2.1.5 Tandem Switching shall provide connectivity to Operator Systems as designated by MCIm;

14.2.1.6 Tandem Switching shall provide access to Toll Free number portability database as designated by MCIm;

14.2.1.7 Tandem Switching shall provide all trunk interconnections discussed under the "Network Interconnection" section (e.g., SS7, MF, DTMF, Dial Pulse, PRI-ISDN, DID, and CAMA-ANI (if appropriate for 911));

14.2.1.8 Tandem Switching shall provide connectivity to PSAPs where 911 solutions are deployed and the tandem is used for 911; and

14.2.1.9 Tandem Switching shall provide connectivity to transit traffic to and from other carriers.

14.2.2 Tandem Switching shall accept connections (including the necessary signaling and trunking interconnections) between end offices, other tandems, IECs, ICOs, CAPs and CLEC switches.

14.2.3 Tandem Switching shall provide local tandeming functionality between two end offices including two offices belonging to different CLEC's (e.g., between an MCIm end office and the end office of another CLEC).

14.2.4 Tandem Switching shall preserve CLASS/LASS features and Caller ID as traffic is processed. Additional signaling information and requirements are provided in Section 12.

14.2.5 Tandem Switching shall record billable events and send them to the area billing centers designated by MCIm. Billing requirements are specified in Attachment 8 of this Agreement.

14.2.6 ILEC shall perform routine testing and fault isolation on the underlying switch that is providing Tandem Switching and all its interconnections. When requested by MCIm, the results and reports of the testing shall be made immediately available to MCIm.

14.2.7 When requested by MCIm, ILEC shall provide performance data regarding traffic characteristics or other measurable elements to MCIm for review.

14.2.8 Tandem Switching shall control congestion using capabilities such as Automatic Congestion Control and Network Routing Overflow. Congestion control provided or imposed on MCIm traffic shall be at parity with controls being provided or

imposed on ILEC traffic (e.g., ILEC shall not block MCIm traffic and leave its traffic unaffected or less affected).

14.2.9 Tandem Switching shall route calls to ILEC or MCIm endpoints or platforms (e.g., operator services and PSAPs) on a per call basis as designated by MCIm. Detailed primary and overflow routing plans for all interfaces available within the ILEC switching network shall be mutually agreed to by MCIm and ILEC. Such plans shall meet MCIm requirements for routing calls through the local network.

14.2.10 Tandem Switching shall process originating toll-free traffic received from an MCIm local switch.

14.2.11 In support of AIN triggers and features, Tandem Switching shall provide SSP capabilities when these capabilities are not available from the Local Switching Network Element.

14.2.12 The Local Switching and Tandem Switching functions may be combined in an office. If this is done, both Local Switching and Tandem switching shall provide all of the functionality required of each of those Network Elements in this Agreement.

14.3 Interface Requirements

14.3.1 Tandem Switching shall provide interconnection to the E911 PSAP where the underlying Tandem is acting as the E911 Tandem.

14.3.2 Tandem Switching shall interconnect, with direct trunks, to all carriers with which ILEC interconnects.

14.3.3 ILEC shall provide all signaling necessary to provide Tandem Switching with no loss of feature functionality.

14.3.4 Tandem Switching shall interconnect with MCIm's switch, using two-way trunks, for traffic that is transiting via the ILEC network to interLATA or intraLATA carriers. At MCIm's request, Tandem Switching shall record and keep records of traffic for billing.

14.3.5 At MCIm's request, Tandem Switching shall provide overflow routing of traffic from a given trunk group or groups onto another trunk group or groups according to the methodology that MCIm designates.

14.4   Tandem Switching shall meet or exceed (i.e., be more favorable to MCIm) each of the requirements for Tandem Switching set forth in the following technical references:

14.4.1 Bell Communications Research TR-TSY-000540 Issue 2R2, Tandem Supplement, 6/I/90;

14.4.2 GR-905-CORE covering CCSNIS;

14.4.3 GR-1429-CORE for call management features; and GR-2863-CORE and GR-2902-CORE covering CCS AIN interconnection.

Section 15. Additional Requirements

This Section 15 of Attachment III sets forth the additional requirements for unbundled Network Elements which ILEC agrees to offer to MCIm under this Agreement.

15.1   Cooperative Testing

15.1.1 Definition:

Cooperative Testing means that ILEC shall cooperate with MCIm upon request or as needed to (1) ensure that the Network Elements and Ancillary Functions and additional requirements being provided to MCIm by ILEC are in compliance with the requirements of this Agreement, (2) test the overall functionality of various Network Elements and Ancillary Functions provided by ILEC to MCIm in combination with each other or in combination with other equipment and facilities provided by MCIm or third parties, and (3) ensure that all operational interfaces and processes are in place and functioning properly and efficiently for the provisioning and maintenance of Network Elements and Ancillary Functions and so that all appropriate billing data can be provided to MCIm.

15.1.2 Requirements

Within 45 days of the Effective Date of this Agreement, MCIm and ILEC will agree upon a process to resolve technical issues relating to interconnection of MCIm's network to ILEC's network and Network Elements and Ancillary Functions. The agreed upon process shall include procedures for escalating disputes and

unresolved issues up through higher levels of each company's management. If MCIm and ILEC do not reach agreement on such a process within 45 days, any issues that have not been resolved by the parties with respect to such process shall be submitted to the procedures set forth in Part A Section 23 of this Agreement unless both parties agree to extend the time to reach agreement on such issues.

15.1.2.1 ILEC shall provide MCIm access for testing at any interface between a ILEC Network Element or combinations and MCIm equipment or facilities. Such test access shall be sufficient to ensure that the applicable requirements can be tested by MCIm. This access shall be available seven (7) days per week, 24 hours per day.

15.1.2.2 MCIm may test any interfaces, Network Elements or Ancillary Functions and additional requirements provided by ILEC pursuant to this Agreement.

15.1.2.3 ILEC shall provide engineering data as requested by MCIm for the loop components as set forth in Sections 2, 3 and 4 of this Attachment which MCIm may desire to test. Such data shall include equipment engineering and cable specifications, signaling and transmission path data.

15.1.2.4 Upon MCIm's request, ILEC shall provide to MCIm any office records, central office layout and design records and drawings, system engineering and other applicable documentation pertaining to a Network Element or Ancillary Function or the underlying equipment that is then providing a Network Element or Ancillary Function to MCIm.

15.1.2.5 ILEC shall provide to MCIm upon request, all applicable test results, from ILEC testing activities on a Network Element or Ancillary Function or Additional Requirement or the underlying equipment providing a Network Element or Ancillary Function or Additional Requirements. MCIm may review such testing results and may notify ILEC of any deficiencies that are detected.

15.1.2.6 ILEC shall temporarily provision MCIm designated Local Switching features for testing. Within 60 days of the Effective Date of this Agreement, MCIm and ILEC shall mutually agree on the procedures to be established between ILEC and MCIm to expedite such provisioning processes for feature testing.

15.1.2.7 Upon MCIm's request, ILEC shall provide technical staff to meet with MCIm representatives to provide required support for Cooperative Testing.

15.1.2.8 Dedicated Transport and Loop Feeder may experience alarm conditions due to in-progress tests. ILEC shall not remove such facilities from service without obtaining MCIm's prior approval.

15.1.2.9 ILEC shall get acceptance from MCIm prior to conducting tests or maintenance procedures on Network Elements or Ancillary Functions or on the underlying equipment that is then providing a Network Element or Ancillary Function, that may cause a service interruption or degradation of service

15.1.2.10 ILEC shall provide a single point of contact to MCIm that is available 7 days per week, 24 hours per day for trouble status, sectionalization, resolution, escalation, and closure. Such staff shall be adequately skilled to allow expeditious problem resolution.

15.1.2.11 ILEC shall provide to MCIm electronic access to 105 responders, 100-type test lines, or 102-type test lines associated with any circuits under test.

15.1.2.12 ILEC shall participate in Cooperative Testing with MCIm upon MCIm's request to test any operational interface or process used to provide Network Elements, Ancillary Functions or Services to MCIm.

15.1.2.13 MCIm and ILEC shall endeavor to complete Cooperative Testing as stated in Attachment 8.

15.1.2.14 ILEC shall participate in Cooperative Testing requested by MCIm whenever it is deemed necessary by MCIm to insure service performance, reliability and customer serviceability.

15.1.2.15 MCIm may accept or reject the Network Element ordered by MCIm if, upon completion of cooperative acceptance testing, the tested Network Element does not meet the requirements stated herein.

15.2 Performance

15.2.1 Scope

This section addresses performance requirements for Network Elements and Ancillary Functions to provide local service. It includes requirements for the reliability and availability of Network Elements and Ancillary Functions, and quality parameters such as transmission quality (analog and digital), and speed (or delay). In addition, an overview of service performance requirements is given.

15.2.1.1 The General Performance Requirements in this section apply to all aspects of Network Elements and Ancillary Functions. Additional requirements are given in this performance section and in the individual Network Elements sections.

15.2.1.2 ILEC shall work cooperatively with MCIm to determine appropriate performance allocations across Network Elements.

15.2.2 ILEC shall provide real-time, remote data access to performance monitoring and alarm data on events affecting (or potentially affecting) MCIm's traffic.

15.2.3 ILEC shall provide performance equal to or better than all of the requirements set forth in the following technical references:

15.2.3.1 **Bell Communications Research, Inc. Documents**

15.2.3.1.1 FR-64, *LATA Switching Systems Generic Requirements (LSSGR)*. This document contains 117 Technical References and Generic Requirements. Sections provide the requirements for local switching systems (also referred to as end offices) that serve customers' lines. Some modules of the LSSGR are also referenced separately in this document.

15.2.3.1.2 TR-NWT-000499, Issue 5, Rev 1, April 1992, *Transport Systems Generic Requirements (TSGR): Common Requirements.*

15.2.3.1.3 TR-NWT-000418, Issue 2, December 1992, *Generic Reliability Assurance Requirements For Fiber Optic Transport Systems.*

15.2.3.1.4 TR-NWT-000057, Issue 2, January 1993, *Functional Criteria for Digital Loop Carriers Systems.*

15.2.3.1.5 TR-NWT-000507, Issue 5, December 1993, *LSSGR - Transmission, Section 7.*

15.2.3.1.6 GR-303-CORE, Issue 1, September 1995, *Integrated Digital Loop Carrier System Generic Requirements, Objectives, and Interfaces.*

15.2.3.1.7 GR-334-CORE, Issue 1, June 1994, *Switched Access Service: Transmission Parameter Limits and Interface Combinations.*

15.2.3.1.8 TR-NWT-000335, Issue 3, May 1993, *Voice Grade Special Access Services - Transmission Parameter Limits and Interface Combinations.*

15.2.3.1.9 TR-TSY-000529, Issue 2, July 1987, *Public Safety - LSSGR.*

15.2.3.1.10 GR-1158-CORE, Issue 2, October 1995, *OSSGR Section 22.3: Line Information Database.*

15.2.3.1.11 TR-TSY-000511, Issue 2, July 1987, *Service Standards, a Module (Section 11) of LATA Switching Systems Generic Requirements (LSSGR, FR-NWT-000064).*

15.2.3.1.12 TR-NWT-000393, January 1991, *Generic Requirements for ISDN Basic Access Digital Subscriber Lines.*

15.2.3.1.13 TR-NWT-000909, December 1991, *Generic Requirements and Objectives for Fiber In The Loop Systems.*

15.2.3.1.14 TR-NWT-000505, Issue 3, May 1991, *LSSGR Section 5, Call Processing.*

15.2.3.1.15 FR-NWT-000271, 1993, *Operator Services Systems Generic Requirements (OSSGR).*

15.2.3.1.16 TR-NWT-001156, Issue 2, July 1993, *OSSGR Operator Services Systems Generic Requirements, Section 21, Operator Subsystem.*

15.2.3.1.17 SR-TSY-001 171, Issue 1, January 1989, *Methods and Procedures for System Reliability Analysis.*

15.2.3.1.18 Bellcore *Telecommunications Transmission Engineering,* 3rd Ed, 1990.

15.2.3.2 ANSI Standards

15.2.3.2.1 ANSI T1.512-1994, Network Performance - Point-to-Point Voice-Grade Special Access Network Voiceband Data Transmission Objectives.

15.2.3.2.2 ANSI T1.506-1990, Network Performance - Transmission Specifications for Switched Exchange Access Network.

15.2.3.2.3 ANSI T1.508-1992, Telecommunications - Network Performance - Loss Plan for Evolving Digital Networks. Also supplement T1.508a-1993.

15.2.3.2.4 ANSI T1.101-1994, Digital Synchronization Network Plan.

15.2.3.3 TIA/EIA Standards

15.2.3.3.1 Requirements not specifically addressed here shall be found in the documents listed in Electronic Industries Association/Telecommunications Industries Association Standards and Engineering Publications.

15.2.3.3.2 TIA/EIA TSB-37A, Telephone Network Transmission Model for Evaluating Modem Performance.

15.2.3.3.3 TIA/EIA TSB-38, Test Procedure for Evaluation of 2-wire 4 kHz Voiceband Duplex Modems.

15.2.3.4 IEEE Standards